

REMARKS

Applicants note that Claim 6 of the present application has not been rejected on prior art grounds. Accordingly, while the Office Action does not expressly so state, Applicants believe that Claim 6 is considered to distinguish over the prior art of record. Moreover, for the reasons set forth hereinafter, Applicants respectfully submit that Claim 6 is allowable in its present dependent form.

Claims 1-6 have been rejected under 35 USC §112, first and second paragraphs, based on an alleged lack of clarity with regard to the rough-positioning guide means and the fine-positioning guide means. In particular, paragraph 2 of the Office Action states that it is not clear how to make and use the claimed fine-positioning guide means. Furthermore, paragraph 3 of the Office Action, at page 3, states that it is not clear whether the rough-positioning guide means are intended to include other structure beside that already set forth in the claim. In response to these grounds of rejection, Applicants have revised the language of Claim 1 to clarify the points raised in the Office Action. With regard to the fine-positioning guide means (now referred to as "guide elements"), the Office Action notes that this structure is described at paragraph [0006] of the specification. In addition, however, it is also described in the specification at pages 5 and 6, in paragraphs [0017] through [0019], and especially at lines 13-18 of paragraph [0017] and in paragraph [0019].

Applicants respectfully submit that Claim 1 as amended is clear as to the scope and meaning of the respective rough- and fine-positioning guide elements and is supported by an enabling disclosure. Claim 1 recites that the sliding wedges are resiliently displaced in the latching direction "on rough-positioning guide elements and fine-positioning guide elements". In addition, Claim 1 also recites that the rough-positioning guide elements comprise the bores 8 in each of the latching wedges, together with the associated guide rods "with guide play between the bore and the associated guide rod". The fine-positioning guide elements, on the other hand, comprise the planar inner guide surfaces of side walls of the latching housing, against which the planar side surfaces of the latching wedges are slideably displaceable in the latching directions. These limitations are described in the specification, and illustrated in Figure 1 of the drawing.

Claims 1-5 and 7 have been rejected under 35 USC §103(a) as unpatentable over European patent document EP 0 314 075 B1 (Galantucci, cited in the Information Disclosure Statement), in view of Roethel (U.S. Patent No. 2,629,621).

The present invention is directed to a locking mechanism of the type which is used in particular for the tailgate door of a vehicle, in which a locking housing 1 engages vertically into an interior recess of a latching housing 2. In the locked position, the locking housing is fixed against movement in the vertical

direction by a rotary latch 3, which engages with a latching bracket 4, fastened on a baseplate 5 of the latching housing. In order to prevent lateral (sideways) movement of the locking housing relative to the latching housing (and potentially annoying rattling noises), the invention provides a pair of spring loaded tapered wedges 7 which engage with tapered edges of the locking housing 1 as it moves inwardly into the interior of the latching housing 2. In order to provide effective lateral immobilization in this manner, the wedges 7 are resiliently displaceable in the latching (vertical) direction by both rough-positioning guide elements and fine-positioning guide elements. The rough-positioning guide elements serve to guide the tapered edges of the locking housing 1 into approximately the proper lateral position, so that the fine-positioning guide elements can thereafter assure that a precise and proper alignment of the locking housing and the latching housing.

According to the invention, each of the wedges 7 has a longitudinally extending bore 8 which engages with a longitudinally extending guide rod 9 and guides its movement (against the force of a biasing spring 10) in the latching direction. The rough-positioning guide elements, constituted by the respective bores and guide rods, are provided with a sufficiently large amount of play between the bores and guide rods to permit lateral movement of the wedges 7, so that lateral movement of the locking housing 1 is possible. For example, the cylindrical guide rod may have a diameter of 5 mm, with a diametrical guide play of approximately 0.2 mm for this purpose. (See specification at page 6, lines 1-7, paragraph [0017].)

Such rough-positioning of the lock housing in the lateral direction permits further fine-positioning by the latching wedges 7 bearing against the side walls 11 of the latching housing 2, as noted in paragraph [0017] of the specification. That is, as the locking housing 1 moves downward, if it is slightly offset from proper alignment with the latching housing, it engages with the locking wedges sequentially, moving them downwardly and outwardly until they then engage with and bear on the lateral support surfaces of the side walls 11, which achieve the final fine-positioning.

The Galantucci reference (EP 0 314 075 B1) is discussed in the specification of the present application at paragraph [0003]. As pointed out there, in Galantucci, as best seen in Figure 3, the latching wedges 26 are guided vertically by means of tongue and groove elements. As a result, when the lock is latched in place, malfunctions may occur due to binding of the latching wedges tilting with the guiding elements. Furthermore, as acknowledged in the Office Action at paragraph 5, Galantucci does not disclose the use of bores and guide rods associated with each of the wedges 26. However, this feature is said to be taught by the Roethel reference, which includes wedge blocks 60 that are slideable in a horizontal direction on a supporting surface 59. The wedge blocks are guided in their sliding movement by rod 61, and biased against inward movement by a spring 64. As can be seen by a comparison of Figures 1 and 2, as the abutment member 48 which partially surrounds the rotary latch bolt 49 moves from left to right (as it would, when the vehicle door is closed), the abutment member 48 engages with the curved surface 60a of the wedge block 60,

moving it toward the right against the force of the spring 64. In the closed position of Figure 2, the abutment member 48 abuts against the wedge block 60, fixing the door against vertical movement. See Column 4, lines 30-41 and lines 58-69.

As noted at paragraph 5 of the Office Action, Roethel does contain a slideable wedge which has a bore and a corresponding guide rod. It does not, however, teach or suggest the provision of "an amount of guide play between said bore and the associated guide rod [which is sufficient to allow] rough lateral positional fixing of the latching wedges between the lock housing and the latch housing". Indeed, Roethel contains no disclosure which suggests that any such play is allowed between the wedge block 60 and the rod 61. Moreover, in Roethel there would appear to be no utility in providing such play for allowing vertical movement of the wedge block, comparable to that of the present invention, because gravity will hold the wedge block 60 against the sliding surface 59 in any event.

In both Galantucci and Roethel, rough-positioning of the locking housing relative to the latching housing is provided by an entirely different mechanism. In particular, in Roethel, rough-positioning is provided by the tapered surface 62a of the portion 62 of the base 52 of the keeper frame, with which the latch bolt initially engages and meshes. (See Column 4, lines 6-11.) In Galantucci, on the other hand, rough-positioning is provided by the provision of upper and lower oblique surfaces 34 and 35 on the wedge-shaped blocks 26, with the respective

surfaces having different angles of inclination. As indicated at Column 4, lines 34-40, the more inclined surfaces 34 define a "lead in" which facilitates the insertion of the lock plate 2 into the striker unit 4. Galantucci therefore accomplishes rough-positioning by an arrangement which is both structurally and functionally different from that defined by the claims of the present application.

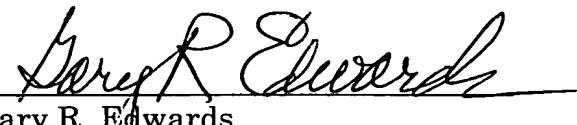
Since neither Galantucci nor Roethel teaches or suggests the rough-positioning of the locking housing relative to the latching housing by the provision of play between the latching wedges 7 and the guide rods 9 in order to permit lateral movement of the latching wedges, Applicants respectfully submit that the claims of the present application distinguish over the cited references. (This feature of the invention is expressly recited in both Claims 1 and 7.)

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit

Account No. 05-1323 (Docket #225/49847).

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE CLAIMS

Please amend the claims as follows:

1. (Amended) A vehicle lock mechanism having a latching housing which is mountable to a support or to the body of the vehicle in a variable position and a lock housing which can be introduced into the latching housing, wherein:

a rotary latch is mounted in the lock housing;

the latching housing is provided with an interior space for accommodating the lock housing, said interior space having side walls;

when the lock is closed, the lock housing lies within the interior space of the latching housing, with the rotary latch secured against an abutment of the latching housing;

the lock housing tapers trapezoidally in a pivoting plane of the rotary latch, becoming progressively narrower in the latching direction, towards the latching housing;

within the latching housing, spring biased sliding wedges [which] are resiliently displaceable in the latching direction on rough positioning guide [means] elements and fine-positioning guide elements, said sliding wedges

having [, and have] tapered edges with a wedge angle corresponding to a slope of tapered edges of the lock housing and being [, are] assigned to each of said two tapered edges of the lock housing; [, the spring force acting counter to the latching direction;]

[the guide means comprise rough- and fine-positioning guide means;]

the rough-positioning guide [means] elements comprises a bore extending in the latching direction within each latching wedge, and an associated guide rod which engages axially in the said bore and is fastened rigidly to the latching housing, with guide play between the bore and the associated guide rod;

the fine-positioning guide [means in each case] elements comprises [a] planar[,] inner guide [surface] surfaces of [a] side [wall] walls of the latching housing, against which inner guide surfaces [and a] planar side [surface] surfaces of [an associated] the latching [wedge;] wedges are slideably displaceable in said latching direction; and

when the lock is being closed, an amount of guide play between said bore and the associated guide rod in the rough-positioning guide [means] elements allows rough lateral positional fixing of the latching wedges between

the lock housing and the latching housing [solely] whereby fine lateral positional fixing can be performed by [means of] the fine-positioning guide elements. [means.]

2. (Amended) The vehicle lock according to Claim 1, wherein the latching housing comprises at least one baseplate [with] to which said side walls are rigidly affixed. [forming parts of the fine-positioning guide means.]

6. (Amended) The vehicle lock according to Claim 1, wherein:

the lock housing has an introductory slot which is open at one end and which engages [encloses] the abutment of the latching housing in the pivoting plane of the rotary latch laterally with respect to the latching direction;

the introductory slot has a region with a narrowest slot portion lying between its open [start and] end and an opposite end thereof; and

during latching of the lock, the abutment of the latching housing passes through the portion with the narrowest slot width.

7. (Amended) A vehicle lock comprising:

a latch housing which is fixedly mountable at a variable location on a vehicle body or on a support member thereon;

a lock housing which is mountable to a movable member that is to be locked to said vehicle body, said lock housing being insertable in a latching direction into a locked position in said latch housing, and having an approximately trapezoidal shape with tapered lateral edges which define a progressively narrow transverse dimension in the latching direction;

a rotary latch mounted in said lock housing for engaging with a latching bracket mounted in said latch housing;

a pair of wedge shaped guide elements within said latch housing, each having a planar guiding surface disposed opposite an inclined surface thereof, said inclined surface being inclined at an angle that corresponds inversely to an inclination angle of the tapered lateral edges of the lock housing, said pair of guide elements being disposed at lateral sides of the latch housing, whereby the inclined surfaces of the guide elements engage with the tapered lateral edges of the lock housing as it is inserted into the latch housing;

a pair of bores extending in the latching direction, one within each of said guide elements; and

a pair of guide rods fixedly mounted to said latch housing, which [engage] guide rods extend axially in each of said bores, respectively, and resiliently support said guide elements against movement in the latching direction;

wherein an amount of lateral play between said guide rods and said bores allows lateral movement of said guide elements relative to said guide rods and said latch housing, so that said guiding surfaces move into contact with planar lateral interior surfaces of said latch housing as said lock housing is inserted into the latch housing in the latching direction.